Title: Link Sizing Based On Both User Behavior And Traffic Characteristics

Inventor(s): Michael Cheung, et al.

Express Mail No. EV322192416US Date: August 21, 2003

Docket No:. 50325-0796

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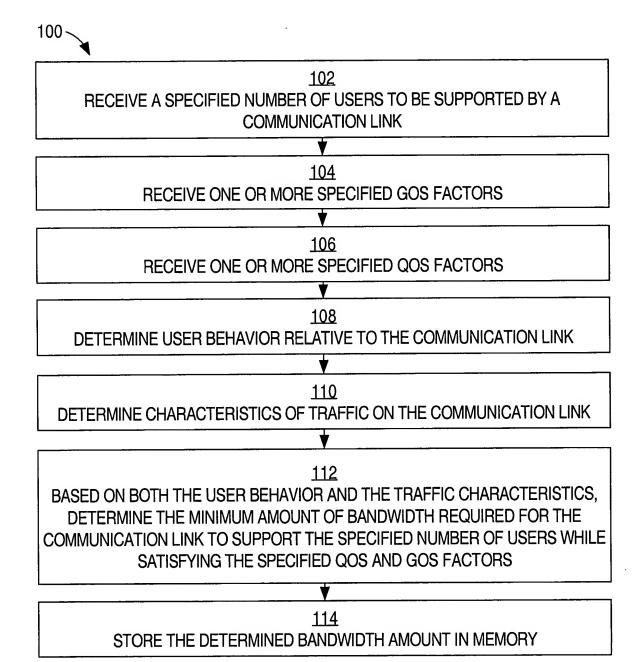


FIG. 1

200 202 FOR EACH i FROM 0 TO K', DETERMINE A SEPARATE CORRESPONDING P_i 204 GUESS AN INITIAL REQUIRED CAPACITY S' 206 FOR EACH *i* FROM 0 TO K', DETERMINE A SEPARATE CORRESPONDING $\varepsilon_i(S')$ 208 DETERMINE AN OVERALL PACKET LOSS RATE BY ADDING THE PRODUCTS OF P_i AND $\varepsilon_i(S')$ FOR EACH i FROM 0 TO K'210 DOES THE OVERALL PACKET LOSS YES RATE SATISFY THE SPECIFIED MAXIMUM PACKET LOSS PROBABILITY θ ? ₹NO 212 INCREMENT S' BY A SPECIFIED AMOUNT ΔS 214 STORE S'IN MEMORY AS THE MINIMUM CAPACITY REQUIRED TO SUPPORT K'

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FIG. 2

USERS

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300 🚤

YES

FIG. 3

302

BASED ON A SPECIFIED AVERAGE CALL DURATION $\mu^{\text{-1}}$, A SPECIFIED NUMBER OF USERS K', AND A SPECIFIED MAXIMUM CALL BLOCKING PROBABILITY, DETERMINE AN AVERAGE INTER-CALL ARRIVAL TIME λ USING M/M/K'/K' **ANALYSIS**

304

FOR EACH i FROM 0 TO K', DETERMINE A SEPARATE CORRESPONDING Pi BASED ON THE AVERAGE INTER-CALL ARRIVAL TIME λ

> 306 GUESS AN INITIAL REQUIRED CAPACITY S'

> > 308

FOR EACH I FROM 0 TO K', DETERMINE A SEPARATE CORRESPONDING $\varepsilon_i(\alpha,\eta,\gamma,B,S')$ USING FLUID-FLOW ANALYSIS

310

DETERMINE AN OVERALL PACKET LOSS RATE BY ADDING THE PRODUCTS OF P_i AND $\varepsilon_i(\alpha, \eta, \gamma, B, S')$ FOR EACH i FROM 0 TO K'

312

DOES THE OVERALL PACKET LOSS RATE SATISFY THE SPECIFIED MAXIMUM PACKET LOSS PROBABILITY θ ?

♥ NO

314 INCREMENT S'BY A SPECIFIED AMOUNT ΔS

316

STORE S' IN MEMORY AS THE MINIMUM CAPACITY REQUIRED TO SUPPORT K'**USERS**

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